Trend Study 25C-30-98

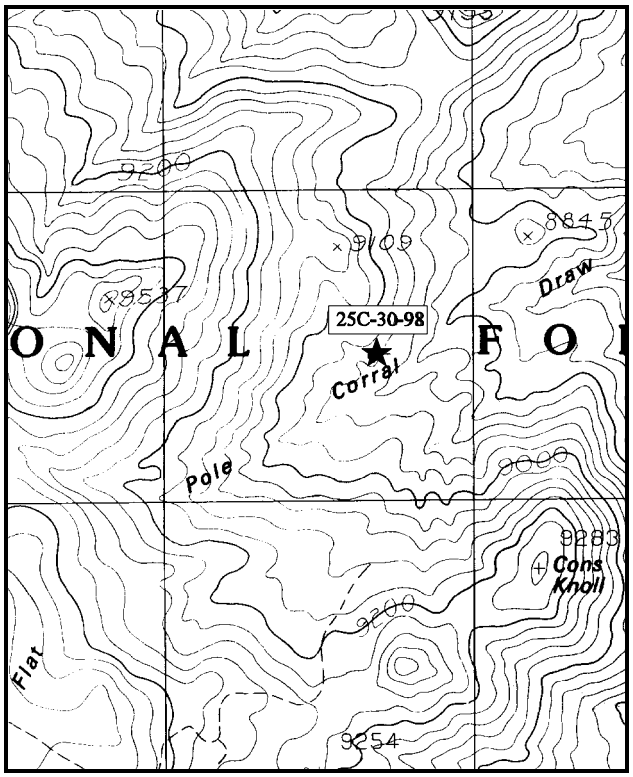
Study site name: Pole Corral Draw . Range type: Meadow .

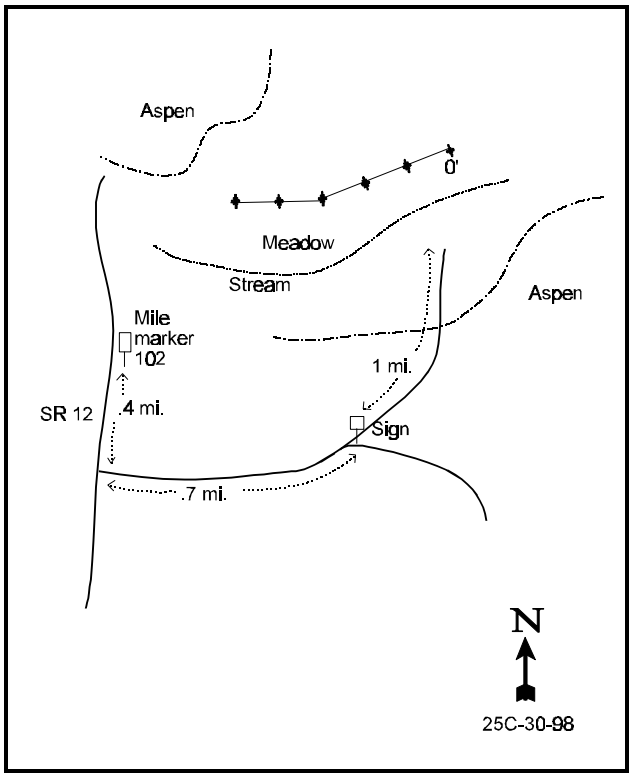
Compass azimuth: frequency baseline 227 M degrees. Lines 4-5 233°M

Footmark (first frame placement) 5 feet. Frequency belt placement; line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From mile marker 102 on SR 12, drive south 0.4 miles to a road heading east. Drive 0.7 miles to fork with a sign. Take the left fork heading towards Pole Corral Draw. Go 1 mile to a meadow and stop by the creek. The site is on the other side of the creek. The 0-foot stake is near the first set of clipping baskets. The site is marked by short fenceposts and runs at 227 degrees magnetic.





Map name: Lower Bowns Reservoir . Diagrammatic Sketch

Township 31 S. , Range 5 E. , UTM 4211415.681 N, 472711.776 E

DISCUSSION

Trend Study No. 25C-30

The Pole Corral Draw study is a new trend site placed in Pole Corral Draw. It samples a meadow community along the banks of the south fork of Oak Creek. The study area has a gentle 1% to 3% slope with a southeast aspect. Elevation is about 8,900 feet. Water runs in the nearby creek year round. During the spring, parts of the meadow are saturated and water can be found on the surface. Further away from the creek it gradually becomes drier with slight changes in the plant composition. Nearby slopes contain a sagebrush-grass type with pockets of aspen.

The area is used by elk in the early spring which is a cause for concern with the Forest Service and local permittees. For this reason a utilization study was also placed on the meadow during the fall of 1997 to determine the amount of early elk use, cow use, and forage production. Pellet group data taken on June 1st 1998, before cattle were allowed on the allotment, estimated 29 elk use days/acre. No deer or cattle use was observed. As of June 1st, herbaceous production with no grazing was estimated at 736 lbs/acre. Production with early elk use was estimated at 799 lbs/acre. This demonstrates that production with early elk use was higher by 64 lbs/acre. This phenomenon occurs often with the thought that early spring use stimulates additional growth of grasses and forbs. This has been observed on other utilization studies around the state during years of normal and above normal spring precipitation. The site was revisited in October to estimate cow use and total annual production but early heavy snow made clipping impossible.

Soil at the site is moderately deep and relatively rock free. There are some boulders on the surface along the creek edge and side slopes. Effective rooting depth (see methods) is estimated at an average of almost 26 inches. Texture is a sandy clay loam with a slightly acid pH (6.2). Parent material is a basalt. There is no erosion on the meadow itself due to the abundant herbaceous vegetation cover.

There are few shrubs on the meadow. The most common species is Wood's rose which occurs mainly along the drier edges of the meadow. Density is estimated at 980 of mostly young plants/acre. There are also a few broom snakeweed and snowberry plants, but all shrubs appear unutilized.

The most important aspect of this site is the herbaceous understory which provides virtually all of the cover on the site. Production during study site establishment on July 31, 1998 was excellent and much higher than the early June estimate. Vegetation was knee high and very dense in most places. Eighteen species of grasses, sedges, and a rush were classified which produced 47% cover. Forbs are also diverse with 29 species encountered. These produce an additional 61% cover. However, composition is poor with the grass component dominated by the increaser Kentucky bluegrass which provides 76% of the grass cover and has a quadrat frequency of 94%. All other grasses have quadrat frequencies of less than 20%. The forb component is also dominated by increasers which include: western yarrow, rose pussytoes, Louisiana sage, pacific aster, trailing fleabane, dandelion, and clover. These forbs account for 97% of the forb cover. Of these species, dandelion and white clover are by far the most abundant, producing 75% of the forb cover.

Due to the narrow nature of the meadow, there is a gradient of wet to dry on some of the sampling belts. Composition on the wetter areas is dominated by two sedges, a rush, tufted hair-grass, carpet bentgrass, and a few forbs. As the soil becomes slightly drier, dandelion, clover, and Kentucky bluegrass totally dominate the composition. This characterizes most of the meadow. The drier side slopes have a greater diversity as clover disappears and dandelion becomes less abundant. Elk use appears to be concentrated along the Kentucky bluegrass, dandelion, and clover band.

1998 APPARENT TREND ASSESSMENT

The soil is well protected and erosion will not be a problem unless heavy grazing combined with drought occurs. The browse component is not important and consists mostly of a small population of Woods rose.

The most important aspect of this site is the herbaceous plants. Production was excellent in 1998 with thick vegetation growing knee high. Unfortunately, the bulk of the grasses and forbs are considered increasers which increase under heavy grazing pressure. Kentucky bluegrass provides 76% of the grass cover, while dandelion and clover account for 75% of the forb cover. Some of the more preferred native species are present in small numbers. Future trends will depend on compositional changes which will take a considerable length of time.

HERBACEOUS TRENDS --
Herd unit 25C, Study no: 30

Type	Species	Nested Frequency '98	Quadrat Frequency '98	Average Cover % '98
G	Agropyron smithii	12	5	.10
G	Agrostis stolonifera	26	8	1.27
G	Agropyron trachycaulum	20	8	.14
G	Bouteloua gracilis	44	10	2.19
G	Carex nebraskensis	15	3	.91
G	Carex spp.	57	17	2.19
G	Deschampsia caespitosa	17	6	.66
G	Hordeum brachyantherum	26	9	1.45
G	Hordeum jubatum	7	5	.12
G	Juncus spp.	14	6	.03
G	Muhlenbergia montana	8	3	.09
G	Poa fendleriana	17	5	.36
G	Poa pratensis	420	94	35.76
G	Sitanion hystrix	13	6	.11
G	Stipa columbiana	18	6	.20
G	Stipa comata	8	4	.19
G	Stipa lettermani	31	11	.78
G	Carex rostrata	7	2	.18
Total Annual Grasses		0	0	0
Total Perennial Grasses		760	208	46.77
F	Achillea millefolium	156	46	7.33
F	Agastache urticifolia	6	2	.01
F	Antennaria rosea	9	3	.30
F	Androsace septentrionalis (a)	27	11	.15
F	Arabis spp.	12	6	.03
F	Artemisia dracunculus	2	1	.15
F	Artemisia ludoviciana	20	5	.62
F	Aster chilensis	133	50	2.67
F	Castilleja flava	16	6	.22

Type	Species	Nested Frequency '98	Quadrat Frequency '98	Average Cover % '98
F	Chenopodium spp. (a)	2	1	.03
F	Collinsia parviflora (a)	3	2	.01
F	Descurainia pinnata (a)	2	2	.01
F	Draba spp. (a)	1	1	.00
F	Equisetum spp.	19	8	.06
F	Erigeron flagellaris	61	20	2.09
F	Erigeron spp.	15	4	.24
F	Eriogonum spp.	3	1	.03
F	Eriogonum racemosum	5	2	.06
F	Hymenoxys richardsonii	3	2	.09
F	Lepidium spp. (a)	15	5	.07
F	Oenothera spp.	21	7	.10
F	Penstemon spp.	6	2	.03
F	Potentilla anersina	4	3	.07
F	Polygonum douglasii (a)	7	4	.02
F	Potentilla gracilis	8	3	.09
F	Senecio spp.	1	1	.00
F	Taraxacum officinale	315	89	17.77
F	Trifolium repens	261	59	28.26
F	Vicia americana	4	2	.38
Total Annual Forbs		57	26	0.29
Total Perennial Forbs		1080	322	60.68

BROWSE TRENDS --
Herd unit 25C, Study no: 30

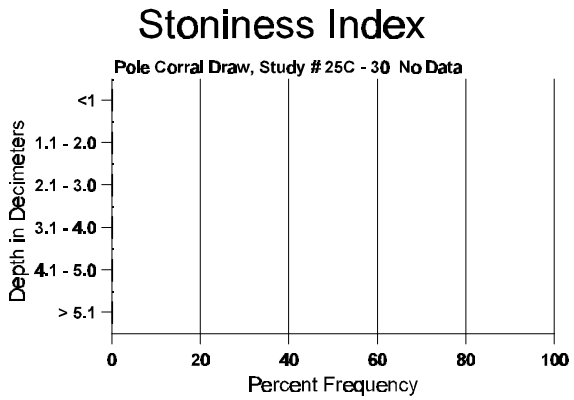
Type	Species	Strip Frequency '98	Average Cover % '98
B	Gutierrezia sarothrae	2	.18
B	Rosa woodsii	5	.33
B	Symphoricarpos oreophilus	0	-
Total for Browse		7	0.50

BASIC COVER --
Herd unit 25C, Study no: 30

Cover Type	Nested Frequency '98	Average Cover % '98
Vegetation	497	88.15
Rock	27	1.41
Pavement	41	.19
Litter	195	13.53
Cryptogams	6	.02
Bare Ground	98	1.10

SOIL ANALYSIS DATA --
Herd Unit 25C, Study # 30, Study Name: Pole Corral Draw

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
25.6	45.5 (17.7)	6.2	50.2	24.0	25.8	4.7	28.0	284.8	.6



PELLET GROUP FREQUENCY --
Herd unit 25C, Study no: 30

Type	Quadrat Frequency '98
Elk	2
Cattle	12

BROWSE CHARACTERISTICS --
Herd unit 25C, Study no: 30

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Gutierrezia sarothrae																		
M	98	2	-	-	-	-	-	-	-	-	2	-	-	-	40	6	9	2
% Plants Showing '98		Moderate Use 00%		Heavy Use 00%		Poor Vigor 00%									%Change			
Total Plants/Acre (excluding Dead & Seedlings)													'98		40	Dec:		-
Rosa woodsii																		
Y	98	46	-	-	-	-	-	-	-	-	46	-	-	-	920			46
M	98	3	-	-	-	-	-	-	-	-	3	-	-	-	60	24	24	3
% Plants Showing '98		Moderate Use 00%		Heavy Use 00%		Poor Vigor 00%									%Change			
Total Plants/Acre (excluding Dead & Seedlings)													'98		980	Dec:		-
Symphoricarpos oreophilus																		
M	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20	39	0
% Plants Showing '98		Moderate Use 00%		Heavy Use 00%		Poor Vigor 00%									%Change			
Total Plants/Acre (excluding Dead & Seedlings)													'98		0	Dec:		-